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NOTES ON THE LIGNEOUS PLANTS DESCRIBED BY  
H. LEVEILLE FROM EASTERN ASIA<sup>1</sup>

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IN THE COURSE of my revision of the ligneous plants described by Léveillé from Eastern Asia, it became apparent that after once going over the ground in systematic order, I would have to publish a supplement to include those plants which for various reasons, had been omitted in the first account.

When I started this work in 1929, after a short sojourn in Edinburgh in the summer of the preceding year, I based it chiefly on notes and photographs I had taken and on duplicates of types generously given to me whenever feasible, by Sir William Wright Smith, Regius Keeper of the Royal Botanic Garden. Later in the course of my work, Sir William kindly offered to send me on loan all the types I had not examined while in Edinburgh; this enabled me to treat the later families more fully. Another reason for the omission of certain species in their proper places was the fact that in many instances, species referred by Léveillé to certain genera, did not belong there but to families previously treated, e.g. *Clerodendron Esquirolii* which turned out to be a *Tacca*. There remains also to be cited important additional literature dealing with Léveillé's plants and not yet mentioned in my previous publications.

After having finished my first attempt of an enumeration of Léveillé's ligneous plants in systematic order from the Taxaceae to the Compositae, I journeyed last year once more to Edinburgh to go over the Léveillé herbarium, and again Sir William facilitated my work in every possible way, so that I was able to accomplish much in the limited time at my disposal.

It is to be expected that with the following supplement, the critical enumeration of the ligneous species described by Léveillé from eastern Asia will be fairly complete with the exception, perhaps, of a few species which could not be located in Léveillé's herbarium.

<sup>1</sup>Continued from Vol. 16: 311–340; for preceding parts see Vols. 10: 108–132, 164–196; 12: 275–281; 13: 299–332; 14: 223–252; 15: 1–27, 89–117, 267–326.

TAXACEAE<sup>1</sup>

**Podocarpus neriifolius** D. Donn. — Rehder in Jour. Arnold Arb. **10**: 108 (1929).

*Alyxia Schlechteri* Léveillé, Fl. Kouy-Tchéou, 30 (1914), quoad Cavalerie, no. 3463; not Léveillé (1911).

CHINA. Kweichou: Lo-fou, rivière de l'ouest, *J. Cavalerie*, no. 3463, March 1909, "petit arbre, 4–5 m." (sub *Alyxia Schlechteri* in herb. Lévl.; duplicate in A. A.).

Leaves of Cavalerie no. 3463 were sent in 1916 to the Arnold Arboretum by Léveillé in answer to our request for a fragment of *Alyxia Schlechteri*. For typical *A. Schlechteri* see Jour. Arnold Arb. **15**: 316 (1934).

Of *P. macrophylla* var. *Argyi* Léveillé in Mem. R. Acad. Ci. Barcelona, ser. 3, **12**: 547 (1916), nom. nud., I have seen no description and no specimen; it is probably not different from *P. macrophylla*.

**Taxus chinensis** (Pilger) Rehder in Jour. Arnold Arb. **1**: 51 (1919).

*Tsuga Mairei* Lemée & Léveillé in Monde Pl. ser. 2, **16**: 20 (1914). — Léveillé, Cat. Pl. Yun-Nan, 58 (1916). — **Synon. nov.**

CHINA. Yunnan: commun sur les collines du nord, 700–800 m., E. E. Maire, May, 1912 (holotype of *Tsuga Mairei*; photo. and merotype in A. A.).

The type specimen is sterile. To *T. chinensis* probably also belongs *T. cuspidata* in Léveillé, Fl. Kouy-Tchéou, 112 (1914).

PINACEAE<sup>2</sup>

**Pinus Massoniana** Lambert. — Rehder in Jour. Arnold Arb. **10**: 109 (1929).

*Pinus Argyi* Lemée & Léveillé in Fedde, Rep. Spec. Nov. **8**: 60 (1910). — Léveillé in Mem. R. Acad. Ci. Barcelona, ser. 3, **12**: 547 (Cat. Pl. Kiang-Sou, 7) (1916).

*Pinus Argyi* var. *longevaginans* Léveillé in Fedde, l.c. and Mem. l.c.

*Pinus Cavaleriei* Lemée et Léveillé in Fedde, l.c.

*Pinus tabulaeformis* Carr. sensu Rehder in Jour. Arnold Arb. **10**: 109 (1929) quoad syn. *P. Argyi*; non Hort. ex Carrière.

CHINA. Kiangsu: Che-sang and Zuosé, Ch. d'Argy (syntypes of *P. Argyi*; photos. in A. A.); locality illegible, Ch. d'Argy (holotype of *P. Argyi* var. *longevaginans*; photo. in A. A.). Kweichou: Pin-fa, montagnes, *J. Cavalerie*, no. 1695, March 22, 1902 (holotype of *P. Cavaleriei*; photo. in A. A.).

<sup>1</sup>See Vol. **10**: 108.

<sup>2</sup>See Vol. **10**: 108.

When I enumerated Léveillé's species cited above in 1929, I had not seen any of the type specimens. I have since had the opportunity to examine the types, and find that they all belong to *P. Massoniana* and bore already on the sheets identification labels, two (*P. Cavaleriei* and *P. Argyi* var. *longevaginans*) by V. Komarov, and the other two signed by M. Y. O[rr].

**Cunninghamia lanceolata** (Lamb.) Hooker in Bot. Mag. 54: t. 2743 (1827).

*Cunninghamia sinensis* var. *prolifera* Lemée & Léveillé in Monde Pl. ser. 2, 16: 20 (1914). — Léveillé, Cat. Pl. Yun-Nan, 56 (1916).

CHINA. Yunnan: Tong-tchouan, pagode, alt. 2500 m., E. E. Maire, March [1910–13] "rameaux secondaires pendants, naissant tous du centre d'un fruit" (holotype of *C. sinensis* var. *prolifera*; photo. in A. A.).

The abnormality that the axis of the cone continues growing into a leafy branch is found occasionally in this species, e.g. in Wilson's no. 4076 from Szechuan. It can hardly be considered a variety; at best it is a monstrous form.

**Cryptomeria japonica** (L.f.) D. Don in Trans. Linn. Soc. 18: 166, t. 13, fig. 1 (1841). — Léveillé, Fl. Kouy-Tchéou, 111 (1914); Cat. Pl. Yun-Nan, 56 (1916).

*Cupressus Mairei* Léveillé, Cat. Pl. Yun-Nan, 56 (1916). — **Synon. nov.**

*Cupressus Duclouxiana* Hickel sensu Rehder in Jour. Arnold Arb. 10: 110 (1929), quoad syn. *Cupressus Mairei*; non Hickel.

CHINA. Yunnan: plaine de Tong-tchouan, pagodes, alt. 2500 m., E. E. Maire, Jan. [1910–13], "grand et superbe resineux, petits rameaux decourbants." (holotype of *Cupressus Mairei*; photo. and merotype in A. A.).

In 1910 when I referred *Cupressus Mairei* doubtfully to *C. Duclouxiana* Hickel, I had not seen the type specimen.

**Thuja orientalis** Linnaeus, Sp. Pl. 1002 (1753). — Léveillé, Fl. Kouy-Tchéou, 112 (1914); Cat. Pl. Yun-Nan, 56 (1916).

*Thuja orientalis* L. var. *Argyi* Léveillé & Lemée in Monde Pl. ser. 2, 17: 15 (1915).

CHINA. Kiangsu: Ch. d'Argy, [1848–66] (holotype of *Th. orientalis* var. *Argyi*; photo. and merotype in A. A.).

The specimen which bears staminate flowers differs slightly from the usual form in its more slender and distant branchlets, but the differences are hardly sufficient to distinguish it as a variety or form.

***Juniperus squamata*** Lambert, Descr. Gen. Pinus, **2**: 17 (1824).—Rehder & Wilson in Jour. Arnold Arb. **9**: 17 (1928).—Handel-Mazzetti, Symb. Sin. **7**: 8 (1929).

*Juniperus Franchetiana* Léveillé, Cat. Pl. Yun-Nan, **57** (1916), nom. seminud.—Komarov in Not. Syst. Herb. Hort. Bot. Reipub. Ross. **5**: 30 (1924), cum descript.

CHINA. Yunnan: au dessus du col de Yentzchay, *J. Delavay*, no. 3112, July 19, 1887 "arbrisseau à tiges redressées" (ex Komarov; syntype in herb. Paris, photo. in A. A.).

*Juniperus Franchetiana*, of which the type could not be located in the Léveillé herbarium is known to me only from a photograph of a Delavay specimen in the Paris herbarium. Komarov distinguishes it from *J. Fargesii* and from *J. squamata* chiefly by its fruit and seed characters, while Handel-Mazzetti l.c. places it under *J. squamata*.

*Juniperus Franchetiana* is based by Léveillé on *J. recurva* Franchet, non Hamilton, which in Plantae Wilsonianae (**2**: 58. 1914) was cited as a synonym of *J. squamata*. Franchet (Pl. David. **1**: 292. 1884) cites under *J. recurva* a specimen collected in Shensi without any further remarks; the type of *J. recurva* Franchet, non Hamilton, and consequently the type of *J. Franchetiana*, would therefore be the David specimen from Shensi and not Delavay's specimen from Yunnan.

***Juniperus squamata*** Lamb. var. ***Fargesii*** (Komar.) Rehder & Wilson in Sargent, Pl. Wilson. **2**: 59 (1914).

*Juniperus Fargesii* Komarov in sched. Herb. Paris, Feb. 1911; in Not. Syst. Herb. Hort. Bot. Reipub. Ross. **5**: 30 (1924), cum descript.

*Juniperus Lemeeana* Léveillé & Blin in Léveillé, Fl. Kouy-Tchéou, **111** (1914).—Handel-Mazzetti, Symb. Sin. **7**: 7 (1929).

CHINA. Kweichou: Gan-chouen, *J. Cavalerie*, no. 3922 (holotype of *J. Lemeeana*; photo. in A. A.).

By Komarov and by Handel-Mazzetti this juniper is considered a distinct species, but it seems closely connected with *J. squamata* by intermediate forms, and I prefer to keep it, at least for the present, as a variety of the latter. If considered a distinct species, the correct name will be *J. Lemeeana* Lévl. & Blin which has priority.

#### GNETACEAE

***Gnetum Cavaleriei*** Léveillé, Fl. Kouy-Tchéou, 186 (1914).—Markgraf in Engler & Prantl, Nat. Pflanzenfam. ed. 2, **13**: 440 (1926).

CHINA. Kweichou: Pin-fa, sur un arbre au sud à Pai-tchen, *J. Cavalerie*, no. 2336, March 30, 1905 (holotype; merotype in A. A.). The specimen is fragmentary; it consists of bare branches and broken,

immature, catkin-like inflorescences covered with a ferrugineous woolly tomentum. By Markgraf (in Bull. Jard. Buitenzorg, ser. 3, **10**: 490. 1930) it was referred to *Populus*, but it certainly does not belong to that genus. From a certain resemblance of the branches and the pubescence to *Lannea*, I thought it might belong to the Anacardiaceae, and Dr. I. W. Bailey who kindly examined the wood structure, made the following statement: "The plant has five traces and five gaps at each node and the wood is clearly ring porous. The various anatomical characters, as a whole, would appear to place the plant in either the Anacardiaceae or the Burseraceae. I should be inclined to place it in the Anacardiaceae except for the fact that this family is stated to have trilacunar nodes. The Burseraceae have five traces, but I know of no species which is ring porous. The transition from three to five traces is an easy one and it may be that certain Anacardiaceae have five traces."

To the Gnetaceae Léveillé (l.c.) doubtfully refers Cavalerie no. 2764 from Pin-fa, Li-tséou-gai, April 1906, "grand arbre à tronc écailleux, les rameaux coupés laissent couler une sorte de colle." The specimen consists of branches with long pendulous staminate catkins which slightly resemble the spikes of *Gnetum*. It belongs to *Carpinus* and is probably referable to *C. Fangiana* Hu with which it agrees in the large winter-buds with strongly striate scales.

#### ARACEAE

**Rhaphidophora Dunniana** Léveillé in Fedde, Rep. Spec. Nov. 9: 325 (1911); Fl. Kouy-Tchéou, 39 (1914).

CHINA. Kweichou: Kuao-siang, lieux ombreux et frais, forêts profonds et ruisseaux, *J. Esquirol*, no. 246, Jan. 1905, "gros lierre qui monte aux arbres et rochers" (holotype; photo. in A. A.).

The specimen consists only of some bare branches, an immature inflorescence and detached leaves which measure 8–15 × 5–9.5 cm. and are abruptly contracted into a short acumen about 5 mm. long. It is similar to *Rh. Calophyllum* Schott from Khasia and Sikkim, but may possibly belong to *Scindapsus*.

#### STEMONACEAE

**Stemona japonica** (Bl.) Miquel, Prol. Fl. Jap. 386 (1867).

*Helwingia Argyi* Léveillé & Vaniot in Bull. Herb. Boissier, ser. 2, **6**: 506 (1906).

*Stemona Argyi* (Lévl. & Vant.) Léveillé in Fedde, Rep. Spec. Nov. **10**: 441 (1912); in Mem. Acad. Ci. Barcelona, ser. 3, **12**: 560 (Cat. Pl. Kiang-sou, 20) (1916). — **Synon. nov.**

CHINA. Kiangsu: Sou-tchéou-fou, *Ch. d'Argy* [1848-66] (syntype of *Helwingia Argyi*; merotype in A. A.). Anhwei: Ning-koue-fou, *Ch. d'Argy* [1848-66] (syntype of *H. Argyi*; ex Léveillé).

Neither C. H. Wright (in Jour. Linn. Soc. Bot. **32**: 493. 1896), nor Schlechter (in Notizbl. Bot. Gard. Mus. Berlin, **9**: 193. 1924) credit *S. japonica* to China, but Hemsley (in Jour. Linn. Soc. Bot. **36**: 95. 1903) cites a specimen from Kiangsu collected by Carles (no. 357) on the hills near Shanghai.

The two specimens in the Léveillé herbarium are in a cover which bears on the outside the localities "Sou-tchéou Ning-koue-fou," but there is no indication from which locality each specimen came, nor any reference to Anhwei (Ngan-hoei).

#### LILIACEAE<sup>1</sup>

**Smilax herbacea** L. var. *acuminata* Wright in Jour. Linn. Soc. Bot. **36**: 97 (1903).

*Smilax herbacea* L. var. *foetida* Léveillé in Mem. Pontif. Accad. Nuov. Lincei, **23**: 351 (Liliac. 23) (1905); Fl. Kouy-Tchéou, 256 (1914).

*Smilax herbacea* L. var. *heterophylla* Léveillé l.c. (1905).

CHINA. Kwéichow: Pin-fa, bois, bords des torrents, lieux ombrageux, *J. Cavalerie*, no. 1314, May 25, 1902 (holotype of *S. herbacea* var. *foetida*; photo. in A. A.); same locality and collector, no. 1314, May 22, 1902 (holotype of *S. herbacea* var. *heterophylla*; photo. in A. A.).

Both of Léveillé's varieties cited above are referable to var. *acuminata* Wright with which they agree in the gradually acuminate leaves, but they differ widely in the width of their leaves, var. *heterophylla* having on one branch leaves about 8 cm. wide, on the other 2 cm. in width, while var. *foetida* is intermediate with about 3-4 cm. width.

**Smilax glabra** Roxburgh, Fl. Ind. ed. 2, **3**: 792 (1832). — Léveillé, Fl. Kouy-Tchéou, 256 (1914). — Rehder in Jour. Arnold Arb. **10**: 110 (1929). — Wang & Tang in Sinensis, **5**: 417 (1934).

*Smilax glabra* Roxb. var. *maculata* Bodinier ex Léveillé in Mem. Pontif. Accad. Nuov. Lincei, **23**: 351 (Liliac. 23) (1905).

*Smilax Dunniana* Léveillé in Fedde, Rep. Spec. Nov. **9**: 446 (1911).

*Smilax Blinii* Léveillé, Fl. Kouy-Tchéou, 256 (1914).

CHINA. Kwéichow: Ma-jo, *J. Cavalerie*, no. 2973, July 1908 (holotype of *S. Dunniana* and *S. Blinii*; merotype in A. A.). Hong-

<sup>1</sup>See Vol. **10**: 110.

kong : dans les rocallles d'un torrent à mi-côte du Pic Victoria, *E. Bodinier*, Feb. 24, 1893 (holotype of *S. glabra* var. *maculata*; photo. in A. A.).

*Smilax Dunniana* is not cited in Flore du Kouy-Tchéou, but *S. Blinii* is described as a new species in that work, based on the same number. The name *S. Dunniana* does not appear on the type specimen in the Léveillé herbarium.

*Smilax glabra* var. *maculata* is hardly different enough to be maintained as a variety; it is at best a slight form. Specimens of *S. glabra* with leaves variegated with irregular white spots occasionally occur, e.g. T. N. Hsiung 494 from Kiangsi, J. B. Norton 1252 from Fukien and U. Faurie 950 from Formosa.

**Smilax microphylla** Wright in Kew Bull. 1895: 117.—Wang & Tang in Sinensia, 5: 418 (1934).

*Smilax Labordei* Léveillé & Vaniot in Mem. Pontif. Accad. Nuov. Lincei, 23: 355 (Liliac. 27) (1905).—Léveillé, Fl. Kouy-Tchéou, 257 (1914).

*Smilax gracillima* Léveillé & Vaniot, l.c. 354 (Liliac. 26) (1905).—Léveillé, Fl. Kouy-Tchéou, 256 (1914).

*Smilax Darrisi* Léveillé in Fedde, Rep. Spec. Nov. 12: 533 (1913); Fl. Kouy-Tchéou, 256 (1914).—Rehder in Jour. Arnold Arb. 10: 111 (1929).—Wang & Tang in Sinensia, 5: 419 (1934).—**Synon. nov.**

*Smilax Mairei* Léveillé in Bull. Géog. Bot. 25: 39 (1915); Cat. Pl. Yun-Nan, 169 (1916).—Rehder in Jour. Arnold Arb. 10: 111 (1929).

CHINA. Kweichou : environs de Kouy-yang, mont. du Collège, rocallles, June 2, 1898 (flowers), environs de Tsin-gay, Dec. 9, 1897 (fruit), *J. Laborde* in herb. *Bodinier*, no. 2318 "petit buisson épineux" (holotype of *S. Labordei*; photo. in A. A.); Tsin-gay, bois, *J. Cavalerie*, no. 1156, July 15, 1903 (holotype of *S. gracillima*, photo. in A. A.); steppes et bois de Gan-chouen, *J. Cavalerie*, no. 3819, Dec. 1909, *J. Esquirol*, no. 3145, May, 1911 (syntypes of *S. Darrisi*; merotype of Cavalerie's and photo. of Esquirol's specimen in A. A.). Yunnan : rochers à mi-mont de La-kou, 2400 m., *E. E. Maire*, June 1912 (holotype of *S. Mairei*; photo. in A. A.).

*Smilax Darrisi* is enumerated as a distinct species by Wang & Tang (l.c.) as it was by me (l.c.), but I do not see now that it can be separated from *S. microphylla*. On the other hand, Wang & Tang refer *S. castaneiflora* Lévl. to *S. microphylla*, but that is undoubtedly a different species.

***Smilax scobinicaulis* Wright in Kew Bull. 1895: 117.**

*Smilax brevipes* Warburg in Bot. Jahrb. 28: 256 (1900). — Wang & Tang in Sinensia, 5: 419 (1934).

*Smilax ocreata* Léveillé & Vaniot apud Léveillé in Mem. Pontif. Accad. Nuov. Lincei, 23: 354 (Liliac. 26) (1905). — Léveillé, Fl. Kouy-Tchéou, 257 (1914). — Non A. De Candolle (1878).

*Smilax Martini* Léveillé & Vaniot in Léveillé in Mem. Pontif. Accad. Nuov. Lincei, 23: 355 (Liliac. 26) (1905). — Léveillé, Fl. Kouy-Tchéou, 257 (1914).

*Smilax Cavaleriei* Léveillé & Vaniot apud Léveillé in Mem. Pontif. Accad. Nuov. Lincei, 23: 355 (Liliac. 27) (1905). — Léveillé, Fl. Kouy-Tchéou, 257 (1914); Cat. Pl. Yun-Nan, 168 (1916).

CHINA. Kweichou: environs de Gan-pin, au Grandes Rocailles, traînant sur les rochers, *L. Martin* in herb. Bodinier, no. 1871, Sept. 17, 1897 (holotype of *S. ocreata*; photo. in A. A.); Pin-fa, bois, *J. Cavalerie*, no. 1315, May 3, 1902 (holotype of *S. Martini*; photo. in A. A.); Pin-fa, montagnes, *J. Cavalerie*, no. 1313, May 3, 1902 (holotype of *S. Cavaleriei*; photo. in A. A.).

The three species of Léveillé's had been referred by Wang & Tang to *S. brevipes* Warb. which can hardly be separated from *S. scobinicaulis* as a distinct species.

***Smilax leucocarpa* Léveillé & Vaniot apud Léveillé in Mem. Pontif. Accad. Nuov. Lincei 23: 354 (Liliac. 26) (1905); 24: 344 (Liliac. 10) (1906). — Wang & Tang in Sinensia, 5: 420 (1934).**

*Smilax Esquirolii* Léveillé, Fl. Kouy-Tchéou, 256 (1914).

CHINA. Kweichou: environs de Kouy-yang, dans les bois de Kien-lin-chan, *E. Bodinier*, no. 2124, Apr. 14 (flowers) and July 7 (fruit), 1898, "arbuste épineux, à tiges dressées, non sarmenteuses" (holotype of *S. leucocarpa*; photo. in A. A.); plateau de San-tou, 1000 m., *J. Esquirol* no. 2109, May 1, 1910 (type of *S. Esquirolii*; photo. in A. A.); Gan-pin, *J. Cavalerie*, no. 2120 (op. cit. 24: 344 under *S. leucocarpa*; photo. in A. A.).

This species resembles somewhat in its small leaves *S. microphylla* Wright, but the leaves are cuneate and obtuse and the fruits are yellow; from the related *S. megalantha* Wright and *S. China* L. it is at once distinguished by the very small obovate to obovate-oblong obtuse leaves and smaller fruits on shorter peduncles.

In the Flore du Kouy-Tchéou Léveillé cites *S. leucocarpa* as a synonym of *S. Esquirolii*, a name which appears on the sheet of Esquirol 2109, but does not seem to have been published before 1914.

***Smilax megalantha* Wright in Kew Bull. 1895: 118. — Wang & Tang in Sinensia, 5: 420 (1934).**

*Smilax loupouensis* Léveillé in Bull. Géog. Bot. 25: 38 (1915); Cat. Pl. Yun-Nan, 169 (1916).

*Smilax ferox* Wall. sensu Rehder in Jour. Arnold Arb. 10: 110 (1929), p.p., quoad synon. *S. loupouensis*; non Wall. ex DeCandolle.

CHINA. Yunnan: "brousse des mont. à Lou-pou, 3000 m., E. E. Maire, Sept. 1912, "arbuste grimpant, un peu épineux, feuilles blanches au dessous, fleurs grises" (holotype of *S. loupouensis*; merotype in A. A.).

*Smilax loupouensis* resembles *S. discotis* Warb. in its stipules extending the entire length of the short petiole, but that species has black fruits. From *S. ferox*, to which it seems closely related, it differs in the only slightly spiny branches, in the leaves being abruptly contracted at the apex and very glaucous beneath and in the stipules. It apparently agrees best with *S. megalantha*, but differs from the type in the shorter petioles with the stipules extending the whole length.

**Smilax China** Linnaeus, Spec. Pl. 1029 (1753). — Léveillé, Fl. Kouy-Tchéou, 256 (1914), p.p. excl. syn. *S. Bodinieri*; Cat. Pl. Yun-Nan, 168 (1916). — Norton in Sargent, Pl. Wilson. 3: 4 (1916).

*Smilax Taquetii* Léveillé in Fedde, Rep. Spec. Nov. 10: 372 (1912).

*Smilax China* L. f. *obtusa* Léveillé in Mem. Pontif. Accad. Nuov. Lincei, 24: 344 (Liliac. 10) (1906).

KOREA. Quelpaert: in silvis Hogno et Hallisan, E. Taquet, nos. 3306, 3307, 3308, Jan., May, Aug. 1909 (syntypes of *S. Taquetii*; photo. of 3306 and isotypes of nos. 3306, 3307 and 3308 in A. A.).

CHINA. Kiangsu: Tou-gou-lin, Ch. d'Argy, [1848-66] (holotype of *S. China* f. *obtusa*; photo. in A. A.).

*Smilax Taquetii* was first identified with *S. China* by Norton (l.c.). *Smilax China* f. *obtusa* does not seem to be different from typical *S. China*.

**Smilax glauco-china** Warburg in Bot. Jahrb. 29: 255 (1900). — Wang & Tang in Sinensis, 5: 420 (1934).

*Smilax Bodinieri* Léveillé & Vaniot apud Léveillé in Mem. Pontif. Accad. Nuov. Lincei, 23: 355 (Liliac. 27) (1905).

*Smilax China* "L." sensu Léveillé, Fl. Kouy-Tchéou 256 (1914), quoad syn. *S. Bodinieri*; non Linnaeus.

CHINA. Kweichou: monts de Hin-y-fou et Hin-y-hien, dans les haies, E. Bodinier, no. 1581, Apr. 13, 1897 (holotype of *S. Bodinieri*; photo. in A. A.).

*Smilax Bodinieri* was cited as a synonym of *S. China* L. by Léveillé in his Flore du Kouy-Tchéou, but Wang & Tang referred it to *S. glauco-china*.

**Smilax menispermoidea** A. De Candolle, Monog. Phan. 1: 108 (1878). — Wang & Tang in Sinensia, 5: 420 (1934).

*Smilax luteocaulis* Léveillé in Fedde, Rep. Spec. Nov. 13: 339 (1914); Cat. Pl. Yun-Nan, 169 (1916).

CHINA. Yunnan: brousse du mont To-chan, 3200 m., E. E. Maire, June, 1913 (holotype of *S. luteocaulis*; merotype in A. A.).

The specimen agrees perfectly with typical *S. menispermoidea*.

**Smilax stemonifolia** Léveillé & Vaniot apud Léveillé in Mem. Pontif. Accad. Nuov. Lincei 23: 356 (Liliac. 28) (1905). — Wang in Bull. Fan Mem. Inst. Biol. 5: 117 (1934).

CHINA. Hongkong: bois le long de Bowenroad, très rare, E. Bodinier, no. 804, Aug. 4, 1894 (holotype; photo. in A. A.).

The type specimen of this species is sterile, but Wang (l.c.) refers to it two other specimens, one from Hunan collected by H. F. Chow and P. Ou-yang, no. 46102, with young fruit, and one from Anhwei collected by F. T. Wang, no. 23860, sterile. Wang states that it is closely related to *S. Bockii* Warb. which differs in its much narrower leaves rounded at the base and in longer pedicels. It may also be near *S. longipes* Warb.

**Smilax castaneiflora** Léveillé in Bull. Acad. Géog. Bot. 25: 39 (1915); Cat. Pl. Yun-Nan, 168 (1916). — Rehder in Jour. Arnold Arb. 10: 111 (1929).

*Smilax microphylla* "Wright" sensu Wang & Tang in Sinensia, 5: 418 (1934) quoad synon. *S. castaneiflora*; non Wright.

CHINA. Yunnan: brousse des mont. à Tong-tchouan, alt. 2700 m., E. E. Maire, June 1912, "arbuste grimpant, fleurs chocolat, fruits noirs" (holotype; merotype in A. A.).

In general appearance this species resembles *S. Bockii* Warb., but the branches are angled and quite spiny, the leaves are short-cordate, lanceolate, broad at the base and partly constricted below the middle into the narrow long-acuminate upper part. By Wang & Tang the species was referred to *S. microphylla* Wright, but it differs from that species in the long peduncle, the gradually acuminate cordate leaves, often somewhat restricted below the middle and green beneath. I have been unable to identify this species with any Chinese species I know. Handel-Mazzetti, no. 10379, from Kweichou may belong here, but it has broader leaves and is not spiny.

**Smilax micropoda** A. DC. var. **reflexa** Norton in Sargent, Pl. Wilson. 3: 6 (1916).

*Smilax Lebrunii* Léveillé, Fl. Kouy-Tchéou, 257 (1914). — Wang & Tang in Sinensia, 5: 421 (1934), "Lebrunii." — **Synon. nov.**

CHINA. Kweichou: bois sacré de Ban-gnien, 1100 m., *J. Esquirol*, no. 3518, March 19, 1912 (holotype of *S. Lebrunii*; photo. in A. A.).

Wang & Tang keep *S. Lebrunii* as a distinct species and refer to it three specimens from Kwangsi, R. C. Ching 5846, 6992 and 7201 which I have not seen.

**Smilax tortopetiolata** Léveillé & Vaniot apud Léveillé in Mem. Pontif. Accad. Nuov. Lincei **23**: 354 (Liliac. 26) (1905); Fl. Kouy-Tchéou, 258 (1914). — Wang & Tang in Sinensia, **5**: 422 (1934), excl. synon.

*Smilax opaca* (A. DC.) Norton in Sargent, Pl. Wilson. **3**: 11 (1916). — **Synon. nov.**

CHINA. Kweichou: Pin-fa, bois, *J. Cavalerie*, no. 1312, March 18, 1902 (holotype of *S. tortopetiolata*; photo. in A. A.).

This species had not yet been reported from western China; it seems common in southeastern China and is represented in this herbarium by many specimens from Fukien, Kwangtung, Hainan and Kwangsi. I have been unable to find any specific difference between *S. opaca* and *S. tortopetiolata* which has to replace the former on account of priority.

**Smilax cocculoides** Warb. var. *lanceolata* Norton in Sargent, Pl. Wilson. **3**: 11 (1916).

*Smilax Pinfaensis* Léveillé & Vaniot apud Léveillé in Mem. Pontif. Accad. Nuov. Lincei, **23**: 355 (Liliac. 27) (1905). — Léveillé, Fl. Kouy-Tchéou, 257 (1914). — **Synon. nov.**

*Smilax tortopetiolata* "Lévl. & Vant." sensu Wang & Tang in Sinensia, **5**: 422 (1934), p.p., quoad synon. *S. pinfaensis*.

CHINA. Kweichou: Pin-fa, *J. Cavalerie* no. 1311, March 18, 1902, "fl. verte" (holotype of *S. pinfaensis*; photo. in A. A.).

*Smilax pinfaensis* is apparently identical with *S. cocculoides* var. *lanceolata* Norton, the type of which is in fruit, and which I have before me. The flowers agree with those of typical *S. cocculoides*, as represented by Wilson, no. 3252. Wang & Tang (l.c.) refer *S. pinfaensis* as a synonym to *S. tortopetiolata*, but it is easily distinguished from the latter by the narrow-lanceolate, long-acuminate leaves, the slender peduncles much longer than the petioles and the short stamens.

**Smilax Lyi** Léveillé in Fedde, Rep. Spec. Nov. **8**: 171 (1910); Fl. Kouy-Tchéou, 257 (1914). — Wang & Tang in Sinensia, **5**: 421 (1934).

CHINA. Kweichou: Pin-fa, montagnes, *J. Cavalerie*, no. 1406, Sept. 27, 1903 "fl. vert-jaune" (holotype; photo. in A. A.).

This species was kept distinct by Wang & Tang. The rather meagre specimen which consists of a branch with two leaves and an inflorescence in bud, resembles *S. stenophylla* A. Gray from the Liukiu Islands and Formosa, but with the scant material at hand, I hesitate to consider these geographically widely separated species identical.

**Smilax perfoliata** Loureiro, Fl. Cochinch. 622 (1790). — Wang & Tang in Sinensis, 5: 422 (1934).

*Smilax perulata* Léveillé & Vaniot in Fedde, Rep. Spec. Nov. 9: 78 (1910). — Léveillé, Fl. Kouy-Tchéou, 257 (1914).

CHINA. K w e i c h o u : Lo-fou, J. Cavalerie, no. 3648, March 1909 (holotype of *S. perulata*; merotype in A. A.).

This species was identified first by Wang & Tang with *S. perfoliata* Lour. (*S. ocreata* A. DC.).

**Heterosmilax Gaudichaudiana** (Kunth) Maximowicz in Bull. Acad. St. Pétersb. 17: 176 (1872); in Mél. Biol. 8: 415 (1872). — A. DeCandolle, Monog. Phan. 1: 44 (1878). — Léveillé in Mem. Pontif. Accad. Nuov. Lincei, 23: 350 (Liliac. 22) (1905).

*Heterosmilax Gaudichaudiana* var. *latifolia* Bodinier ex Léveillé l.c. (1905).

CHINA. H o n g k o n g : bord de l'Aqueduc, près Richmond Terrace, E. Bodinier, Aug. 22, 1894 (holotype of *H. Gaudichaudiana* var. *latifolia*; photo. in A. A.).

In the shape and measurements of the leaves Léveillé's variety agrees with DeCandolle's var.  $\alpha$  *Gaudichaudiana* (l.c.), which represents the type of the species. It seems doubtful whether this and var.  $\beta$  *hongkongensis* (Seem.) A. DC., (l.c.) are sufficiently distinct to be maintained as varieties.

#### TACCACEAE

**Tacca Esquirolii** (Lévl.), comb. nov.

*Clerodendron Esquirolii* Léveillé in Fedde, Rep. Spec. Nov. 11: 298 (1912); Fl. Kouy-Tchéou, 439 (1915).

*Tacca Paxiana* Limpricht f. in Engler, Pflanzenreich, IV. 42: 16 (1928). — P'ei in Mem. Sci. Soc. China, 1, no. 3, p. 162 (1932).

CHINA. K w e i c h o u : bois de Ta-Tham, très ombreux et chaud, J. Esquirol, no. 2802, May 1912, "toute l'inflorescence rouge, lie de vin, feuilles radicales, fleur 1 m. de haut sur tige simple" (holotype of *Clerodendron Esquirolii*; photo. in A. A.).

Léveillé's species was first identified by the writer with *Tacca Paxiana* (see P'ei, l.c.).

SALICACEAE<sup>1</sup>

**Populus adenopoda** Maximowicz in Bull. Soc. Nat. Moscou, **54**: 50 (1879). — Léveillé, Fl. Kouy-Tchéou, 380 (1915); Cat. Pl. Yun-Nan, 250 (1917). — Handel-Mazzetti, Symb. Sin. **7**: 58 (1929).

**Populus macranthela** Léveillé & Vaniot in Bull. Soc. Bot. France, **52**: 142 (March 1905); in Monde Pl. **12**: 9 (1910); in Fedde, Rep. Spec. Nov. **8**: 446 (1910). — Rehder in Jour. Arnold Arb. **10**: 111 (1929).

**Populus Duclouxiana** Dode in Bull. Soc. Nat. Hist. Autun, **18**: 190, t. 11, f. 329 (Extr. Monog. ined. Populus, 32) (1905).

**Populus rotundifolia** Griff. var. *Duclouxiana* (Dode) Gombocz in Math. Termesz. Közl. **30**: 130 (Monog. Gen. Populi) (1908). — Schneider in Sargent, Pl. Wilson. **3**: 25 (1916).

**Populus rotundifolia** Griff.  $\times$  *macranthela* Gombocz in Bot. Közl. **10**: 25, (7) (1910). — Léveillé, Fl. Kouy-Tchéou, 380 (1915).

CHINA. Kweichou: Pin-fa, *J. Cavalerie*, no. 974, April 1, 1903, "grande arbre" (holotype of *P. macranthela*; photo. in A. A.). Yunnan: Ko-kouy près Tchao-tong, *Père Marc Mey* in herb. F. Ducloux, no. 667, in 1906 (in hb. Léveillé and in hb. Univ. Calif. sub *P. macranthela*; isotypes of *P. Duclouxiana* Dode; photos. in A. A.).

In my earlier account of *P. macranthela*, I had considered it a species distinct from *P. adenopoda*, chiefly on account of the absence of the glands at the base of the blade of the leaves, their glabrousness and coarser serration. In comparing a large series of specimens of *P. adenopoda* one finds a great variability in these characters; though the glands are usually conspicuous, they may occasionally be small and partly lacking, as in Wilson's no. 724 from Hupeh, and in Steward, Chiao and Cheo, no. 294, from Kweichou. One of the two mature leaves of Ducloux's specimen in the herbarium of the University of California has an almost suborbicular shape, but on the material from trees cultivated in the Arnold Arboretum similar leaves can be found. Both specimens I have seen of Ducloux's no. 667 bear the name *P. macranthela* in Léveillé's handwriting. Neither Dode nor Gombocz give an exact citation of the specimen upon which *P. Duclouxiana* is based, but I assume that the species is based on Ducloux's no. 667.

**Salix Cavaleriei** Léveillé. — Rehder in Jour. Arnold Arb. **10**: 113 (1929). — Handel-Mazzetti, Symb. Sin. **7**: 61 (1929).

**Salix erioclada** Léveillé. — Rehder, l.c. 115 (1929). — Handel-Mazzetti, l.c. 64, fig. 1, 1, 2 (1929).

Handel-Mazzetti gives a detailed description of the species and figures staminate and pistillate flowers.

<sup>1</sup>See Vol. **10**: 111.

**Salix luctuosa** Léveillé.—Rehder, l.c. 115 (1929).—Handel-Mazzetti, l.c. 68 (1929).

Handel-Mazzetti gives a full description of the pistillate flowers and refers *S. dyscrita* Schneid. as a synonym to this species.

**Salix Duclouxii** Léveillé.—Rehder, l.c. (1929).—Handel-Mazzetti, l.c. 87 (1929).

*Salix kouytchensis* (Lévl.) Schneider in Sargent, Pl. Wilson. 3: 171 (1916).—Rehder, l.c. 117 (1929).

Handel-Mazzetti unites *S. kouytchensis* (Lévl.) Schneid. with *S. Duclouxii* and discusses the close relation of the latter to *S. Bockii* Seemen and *S. variegata* Franch., but prefers to keep these species distinct for the present.

#### MYRICACEAE<sup>1</sup>

**Myrica esculenta** Hamilton ex D. Don, Prodr. Fl. Nepal, 56 (1825).

*Litsea myricopsis* Léveillé, Cat. Pl. Yun-Nan, 150 (1916).—Synon. nov.

CHINA. Kweichou: près Tchang-pou, *J. Cavalerie*, no. 2697, Nov. 3, 1905, "petit arbre" (holotype of *Litsea myricopsis*; merotype in A. A.).

*Myrica esculenta* has been collected in Kweichou also by Handel-Mazzetti (no. 10852).

**Myrica adenophora** Hance in Jour. Bot. 21: 357 (1883).—Léveillé, Fl. Kouy-Tchéou, 281 (1914).

*Litsea Mairei* Léveillé, Cat. Pl. Yun-Nan, 150 (1916).—Synon. nov.

CHINA. Yunnan: collines arides incultes de Tché-hay, alt. 2600 m., E. E. Maire, March, 1912 "arbousier, arbuste rameuse, fleur blanc-verdâtre" (holotype of *Litsea Mairei*; merotype in A. A.).

*Myrica adenophora* does not seem to have been recorded from Yunnan before, nor from Kweichou, for I feel sure that Esquirol no. 3296 cited by Léveillé in his Flore du Kouy-Tchéou under that species (l.c.) does not belong here, but I have not seen it.

#### BETULACEAE<sup>2</sup>

**Alnus Fauriei** Léveillé in Bull. Soc. Bot. France, 51: 423 (1904).—Rehder in Jour. Arnold Arb. 10: 118 (1929).

JAPAN. Honsho: in monte Gurvassan, U. Faurie, no. 783, Sept. 28, 1897 (holotype; photo. in A. A.).

The type specimen bears an identification label by Koidzumi with

<sup>1</sup>See Vol. 10: 118.

<sup>2</sup>See Vol. 10: 118.

the legend "*Alnus cylindrostachya* (Winkl.) Koidz." Though Winkler's name, *A. glutinosa* var. *cylindrostachya*, was published June 17, 1904, while Léveillé's name did not appear before November 1904, Léveillé's binomial has precedence over Winkler's varietal name.

***Alnus nepalensis*** D. Don, Prodr. Fl. Nepal. 58 (1825). — Léveillé, Fl. Kouy-Tchéou, 124 (1914); Cat. Pl. Yun-Nan, 66 (1916).

*Alnus Mairei* Léveillé in Bull. Géog. Bot. 24: 283 (1914).

CHINA. Yunnan: vallées et montagnes de Tong-tchouan, 2500–2700 m., E. E. Maire, Nov. 1913, "grand arbre, chatons jaunes" (holotype of *A. Mairei*; photo. in A. A.).

*Alnus Mairei* was referred to *A. nepalensis* by Léveillé himself in 1916.

***Carpinus Seemeniana*** Diels in Bot. Jahrb. 29: 279 (1900). — Schneider in Sargent, Pl. Wilson. 2: 430 (1916).

*Carpinus pinfaensis* Léveillé & Vaniot in Bull. Soc. Bot. France, 52: 142 (1905).

*Carpinus pubescens* Burkill sensu Winkler in Bot. Jahrb. 51: 501 (1914), p.p., quoad syn. *C. pinfaensis* et *C. Seemeniana*. — Léveillé, Fl. Kouy-Tchéou, 125 (1914). — Hu in Sunyatsenia, 1: 119 (1933).

CHINA. Kweichou: Pin-fa, J. Cavalerie, no. 1011, May 28, 1903, "arbre" (holotype of *C. pinfaensis*; photo. in A. A.).

*Carpinus pinfaensis* was first referred to *C. pubescens* (including *C. Seemeniana*) by Winkler in 1914, but in 1916 it was placed under *C. Seemeniana* by Schneider, where it certainly belongs if *C. Seemeniana* and *C. pubescens* are considered distinct. These two species and also *C. austrosinensis* Hu are closely related and perhaps best united under *C. pubescens* with one or two varieties, but at present I prefer to keep *C. Seemeniana* as a species, since the extreme forms are quite distinct. *Carpinus austrosinensis* is nearer to the latter.

***Carpinus laxiflora*** Blume, Mus. Bot. Lugd.-Bat. 1: 309 (1850): — Schneider in Sargent, Pl. Wilson. 2: 438 (1916).

? *Carpinus laxiflora* Bl. var. *chartacea* Léveillé in Bull. Soc. Bot. France, 51: 424 (1904).

JAPAN: without locality and collector (holotype of var. *chartacea*; ex Léveillé).

No specimen named *C. laxifolia* var. *chartacea* can be found in the Léveillé herbarium, but I have no doubt that it is but a slight variation of *C. laxiflora* under which it was placed by Schneider in 1916.

FAGACEAE<sup>1</sup>

**Castanea mollissima** Blume in Mus. Bot. Lugd.-Bat. **1**: 286 (1850).

*Castanopsis yunnanensis* (Franch.) Léveillé, Cat. Pl. Yun-Nan, 66 (1916), Syn.: "(*C. vulgaris* L., p.p.)" — Camus, Châtaigniers, 485 (1929).

The combination *Castanopsis yunnanensis* was published by Léveillé without any citation of a specimen. It is based on *Castanea vulgaris* var. *yunnanensis* Franchet which is a synonym of *C. mollissima*; also the citation by Léveillé of *C. vulgaris* L., p.p., as a synonym seems to indicate that it is a true *Castanea*. It can, therefore, hardly be referred to any other species than *C. mollissima* which is common in Yunnan; probably to this species belongs also *C. sativa* Mill. cited in Cat. Pl. Yun-Nan, 66.

**Castanopsis cuspidata** (Thbg.) Schottky in Bot. Jahrb. **47**: 625 (1912).

*Castanea Fauriei* Léveillé & Vaniot in Bull. Soc. Bot. France, **52**: 142 (1905). — Camus, Châtaigniers, 241 (1929). — **Synon. nov.**

JAPAN. K i u s h u : autour de Nagasaki, *U. Faurie*, no. 3681, June 1899 (holotype of *C. Fauriei*; isotype in A. A.).

Miss Camus enumerated *C. Fauriei* under the doubtful species of *Castanea* with a note that it is probably a *Castanopsis*.

**Castanopsis hystrix** (Hook. f. & Th.) A. DeCandolle in Jour. Bot. **1**: 182 (1863); Prodr. **16**<sup>2</sup>: 111 (1864). — Léveillé, Cat. Pl. Yun-Nan, 66 (1916). — Rehder in Jour. Arnold Arb. **10**: 118 (1929).

*Castanea Bodinieri* Léveillé & Vaniot in Bull. Soc. Bot. France, **52**: 142 (1905). — Léveillé, Cat. Pl. Yun-Nan, 66 (1916). — Camus, Châtaigniers, 241 (1929).

*Castanopsis Bodinieri* (Lévl. & Vant.) Koidzumi in Tokyo Bot. Mag. **30**: 100 (1916) "Boodinieri."

*Quercus brunnea* Léveillé in Fedde, Rep. Spec. Nov. **12**: 364 (1913); Fl. Kouy-Tchéou, 127 (1914). — Camus, Châtaigniers, 482 (1929); Atlas, pl. 28, fig. 9–11, ix. f. 9–17 (1928).

*Castanopsis brunnea* (Lévl.) Camus, Châtaigniers, Atlas, pl. 28 (1928).

CHINA. K w e i c h o u : Pin-fa, bois, *J. Cavalerie*, no. 2299, Apr. 13, 1905 (holotype of *Q. brunnea*; photo. in A. A.). Y u n n a n : environs de Yun-nan-sen, bois de la pagode de Kiang-tchou-se, *E. Bodinier*, Feb. 2, 1897, "grand arbuste ou petit arbre, fruits en long épis à glands sessiles serrés" (holotype of *Castanea Bodinieri*; photo. in A. A.).

*Castanea Bodinieri* is enumerated by Miss Camus (l.c.) under in-

<sup>1</sup>See Vol. **10**: 118.

completely known species of *Castanea*. *Quercus brunnea* she describes under doubtful species of *Castanopsis* and says "probablement var. ou sous-espèce du *C. Hystrix*."

**Castanopsis Eyrei** (Champ.) Tutcher in Jour. Linn. Soc. Bot. 37: 68 (1905). — Chun in Sunyatsenia, 1: 217, pl. 35 (1934), excl. syn. *Q. Castanopsis*.

*Castanopsis caudata* Franchet in Nouv. Arch. Mus. Paris, ser. 3, 7: 87 (Pl. David. 1: 277) (1884). — Rehder in Jour. Arnold Arb. 10: 119 (1929), excl. syn. *Q. Castanopsis*. — Handel-Mazzetti, Symb. Sin. 7: 28 (1929).

*Quercus trinervis* Léveillé in Fedde, Rep. Spec. Nov. 12: 364 (1913); Fl. Kouy-Tchéou, 128 (1914).

*Quercus cepifera* Léveillé, l.c. 364 (1913); l.c. 127 (1914), pro parte, quoad specimina foliifera.

*Castanopsis asymmetrica* Léveillé, Fl. Kouy-Tchéou, 125 (1914). — A. Camus, Châtaigniers, 472 (1929) "asymmetrica"; Atlas, pl. 72, fig. 15, xxxiv, fig. 17-19 (1928).

*Castanopsis neo-Cavaleriei* A. Camus, Châtaigniers, 375 (1929); Atlas, pl. 72, fig. 1-12, xxxiv, fig. 8-15 (1928).

*Castanopsis trinervis* (Lévl.) A. Camus, op. cit. 400 (1929); Atlas, pl. 70, fig. 1-7, xxxiii, fig. 1-7 (1928).

*Castanopsis tribuloides* var. *echidnocarpa* King sensu Rehder in Jour. Arnold Arb. 10: 119 (1929); non King apud Hooker f. (1888).

CHINA. Kweichou: *J. Cavalerie*, no. 3275, Aug. 20, 1908 (holotype of *Q. trinervis*; photo. in A. A.); sud de Pin-fa, rare, *J. Cavalerie*, no. 2341 (in part, except fruit), June 8, 1905 "fruits ci-joints trouvés par terre; apartiennent-ils à cet arbre" (holotype of *Q. cepifera*, except fruit; photo. in A. A.); Kouy-yang, monts du Collège, *J. Chaffanjon* in herb. *Bodinier*, no. 2235, Apr. 15, 1898, "arbre, fleurs blanches" (syntype of *Castanopsis asymmetrica*; merotype in A. A.); Kouy-yang, bois d'une pagode, *J. Cavalerie*, no. 2078 [cited as 2178 by Léveillé], "arbre" (syntype of *C. asymmetrica*; photo. in A. A.); Kien-lin-chan, *J. Esquirol*, no. 17, May 2, 1904, "feuilles de camélia" (syntype of *C. asymmetrica*; photo. in A. A.).

I agree with Chun in considering *Castanopsis Eyrei* and *C. caudata* identical. Miss Camus places *C. asymmetrica*, *C. Eyrei* and *C. caudata* among the incompletely known species and describes *C. trinervis* as a distinct species. Handel-Mazzetti cites *Castanopsis asymmetrica* as a synonym of *C. caudata* Franch.

**Castanopsis neo-Cavaleriei** A. Camus in Bull. Bimens. Soc. Linn. Lyon, 8: 87 (1929); Châtaigniers, 375 (1929); Atlas, pl. 72, fig. 1-12, xxiv, fig. 8-15 (1928).

*Quercus Cavaleriei* Léveillé & Vaniot in Bull. Soc. Bot. France, 52: 142 (1905); Fl. Kouy-Tchéou, 127 (1914).

*Quercus Castanopsis* Léveillé in Fedde, Rep. Spec. Nov. 12: 363 (1913); Fl. Kouy-Tchéou, 127 (1914).

*Castanopsis caudata* Franchet sensu Rehder in Jour. Arnold Arb. 10: 119 (1929), quoad syn. *Q. Castanopsis*; non Franchet.

*Castanopsis tribuloides* var. *echidnocarpa* King sensu Rehder, l.c. (1929); non King ex Hooker f.

*Castanopsis eyrei* (Champ.) Tutcher sensu Chun in Sunyatsenia, 1: 217 (1934), quoad syn. *Q. Castanopsis*; non (Champ.) Tutcher.

CHINA. Kweichou: Pin-fa, hautes montagnes, *J. Cavalerie*, no. 57 (in part; young fruit), July 15, 1902, "petit arbre" (holotype of *Quercus Cavaleriei*; photo. in A. A.); Pin-fa, Ma-jo, hautes montagnes, rare, *J. Cavalerie*, no. 57 (in part; flowers), May 1902 (syntype of *Q. Castanopsis*; merotype in A. A.); same locality, *J. Cavalerie*, no. 57, Aug. 1908 (syntype of *Q. Castanopsis*; merotype in A. A.); same locality, *J. Cavalerie*, no. 1268, July 1908 (syntype of *Q. Castanopsis*; ex Léveillé; ? merotype in A. A.).

This species is closely related to *C. Eyrei*, but differs in the thinly scurfy-tomentulose brownish under side of the leaves — quite glabrous in *C. Eyrei* — and in the larger, very oblique cupula with more distinct fascicles of spines nearly wanting on the ventral side. From *C. Fargesii* Franch. it differs in the broader leaves less densely tomentulose beneath, — in *C. Fargesii* the dense brown tomentum obscures the veinlets, — and in the larger apparently indehiscent cupula. Two fruiting spikes are figured by Miss Camus on pl. 72; fig. 3 apparently represents the young fruits of *Q. Cavaleriei*, while fig. 4—6 represent mature fruits of *Q. Castanopsis* collected in August.

The name *C. neo-Cavaleriei* for this species has to stand, since there exists already a *Castanopsis Cavaleriei* Lévl. of 1913 which, however, is not a *Castanopsis*, but represents *Sloanea sinensis* (Hance) Hu (see Jour. Arnold Arb. 15: 89. 1934), and the specific epithet of the second synonym cannot be transferred to *Castanopsis*, since this would result in a tautonym.

**Castanopsis tibetana** Hance. — Rehder in Jour. Arnold Arb. 10: 119 (1929).

*Quercus Franchetiana* Léveillé, Fl. Kouy-Tchéou, 128 (1915). — Camus, Châtaigniers, 485 (1929).

Miss Camus states that *C. Franchetiana* is perhaps identical with *C. tibetana*; in a note she says that the leaves of the former are quite different from those of Hance's type in shape, are very lustrous above and more waxy and less pubescent beneath but that she has seen an intermediate form.

**Castanopsis cryptoneuron** (Lévl.) Rehder in Jour. Arnold Arb. **10**: 119 (1929). — Camus, Châtaigniers, Atlas, pl. 54, fig. 1–4 (1928), nom. tantum; text, 418 (1929).

Miss Camus cites the combination as dating from her Atlas of 1928, but since the original binomial is not cited there, it cannot be considered as validly published.

**Castanopsis** spec. Rehder in Jour. Arnold Arb. **10**: 120 (1929).

*Quercus Argyi* Léveillé in Mem. Acad. Ci. Art. Barcelona, ser. 3, **12**: 548 (Cat. Pl. Kiang-Sou, 8) (1916).

CHINA. K i a n g s u : Sonosê, *Ch. d'Argy*, nos. 842, 856 [1846–66].

In the cover of *Q. Argyi* in Léveillé's herbarium, there are two specimens, no. 842 with pistillate and no. 856 with staminate flowers, both belonging apparently to the same species related to *C. Fargesii* Franch., but they have broader and more serrate leaves. Cavalerie's no. 2078 (not 2178) of which I stated (l.c.) that it may belong here, belongs to *C. Eyrei* (Champ.) Tutch. together with the other specimens of *Castanopsis asymmetrica*.

**Castanopsis** spec.

*Myrica Cavaleriei* Léveillé in Fedde, Rep. Spec. Nov. **12**: 537 (1913), pro parte, quoad specim. ♀.

CHINA. K w e i c h o u : haut plateau, route de Pin-fa à Kouyang, *J. Cavalerie*, no. 3184, June 1908 (holotype of *Myrica Cavaleriei*, in part; photo. in A. A.).

Cavalerie's no. 3184 consists of two leafless branches, for which see *Quercus* spec. (p. 72), and a leafy branch with short axillary spikes of pistillate flowers and with lanceolate slender-petioled leaves 10–12 cm. long and about 2 cm. broad.

**Quercus serrata** Thunberg. — Rehder in Jour. Arnold Arb. **10**: 120 (1929).

Since the name *Q. serrata* Thbg. which correctly belongs to the species named *Q. glandulifera* Bl. has been applied by almost all authors, following Siebold and Zuccarini, to *Q. acutissima* Carruthers, it is advisable to consider *Q. serrata* a nomen ambiguum and use *Q. acutissima* and *Q. glandulifera* for the two species involved.

**Quercus guyavaefolia** Léveillé in Fedde, Rep. Spec. Nov. **12**: 363 (1913); Cat. Pl. Yun-Nan, 67 (1916) "guyavifolia." — Rehder in Jour. Arnold Arb. **10**: 121 (1929). — Camus, Chênes, Atlas, **1**: t. 35 (1934).

*Quercus semecarpifolia* Sm. var. *longispica* Handel-Mazzetti, Symb. Sin. 7: 39 (1929).

Handel-Mazzetti cites *Q. guyavaefolia* as a synonym of his *Q. semecarpifolia* var. *longispica*, but does not enumerate the type of Léveillé's species, and apparently bases his description on other specimens from Yunnan and also from Szechuan; Miss Camus' illustrations also are partly based on other specimens. The type specimen of *Q. guyavaefolia* has all the leaves entire.

**Quercus Prainiana** Léveillé. — Rehder in Jour. Arnold Arb. 10: 121 (1929).

This species is figured by Léveillé in the manuscript work Cat. Ill. Pl. Seu-Tchouan on pl. 23 under the name *Q. Prainii*.

**Quercus glauca** Thunberg, Fl. Jap. 175 (1784). — Rehder in Jour. Arnold Arb. 10: 121 (1929). — Handel-Mazzetti, Symb. Sin. 7: 50 (1929).

*Quercus Blakei* Skan var. *Vaniotii* (Lévl.) Chun in Jour. Arnold Arb. 9: 153 (1928).

Chun's new combination is based on *Q. Vaniotii* Lévl. and on Cavalerie, no. 3274 (not 3264, as cited), which undoubtedly belongs to *Q. glauca*; he evidently placed too much faith in Léveillé's statement, that *Q. Vaniotii* is very closely related to *Q. Blakei* Skan. The type specimen consists only of sterile branches; the leaves show the closely appressed pubescence of *Q. glauca*, while *Q. Blakei* has the leaves glabrous and green beneath, more gradually attenuate at base and with shorter appressed and fewer teeth. Handel-Mazzetti cites (l.c.) *Q. Vaniotii* as a synonym of *Q. glauca*.

**Quercus** spec. — Rehder in Jour. Arnold Arb. 10: 122 (1929).

*Myrica Cavaleriei* Léveillé in Fedde, Rep. Spec. Nov. 12: 537 (1913), pro parte, quoad specim. ♂.

CHINA. Kweichou: haut plateau, route de Pin-fa à Kouyang, *J. Cavalerie*, no. 3184 in part (♂), April, 1908 (holotype of *Myrica Cavaleriei*, in part; photo. in A. A.).

To *Quercus* belong two leafless branches with immature staminate catkins; for the pistillate specimen see *Castanopsis* spec. (p. 71).

#### MORACEAE<sup>1</sup>

**Vanieria tricuspidata** (Carr.) Hu in Jour. Arnold Arb. 5: 228 (1924).

*Cudrania tricuspidata* Bureau in Lavallée, Arb. Segrez. 243 (1877). — Nakai, Fl. Sylv. Kor. 19: 114 (1932).

<sup>1</sup>See Vol. 10: 123.

*Morus integrifolia* Léveillé & Vaniot in Bull. Acad. Intern. Géog. Bot. 17, no. 210-11, p. iii (1907). — Schneider in Sargent, Pl. Wilson. 3: 301, in nota (1916).

CHINA. Hopei: Tchao-tchao, cimetière, L. Chanet, no. 49, June 25, 1905. "fruit rouge à la maturité" (holotype of *Morus integrifolia*; photo. in A. A.).

Nakai (l.c.) seems to have first referred *Morus integrifolia* to this species. As *Cudrania* Trècul, though proposed as a nomen conservandum, did not receive the unanimous vote of the Committee, I retain here the oldest generic name *Vanieria* Lour.

As Chanet collected his specimen in a cemetery, it was probably from a planted tree; the specimen has not been recorded as growing wild in Hopei, but we have specimens in the herbarium from the adjoining provinces — Shansi, Honan and Shantung.

**Ficus gibbosa** Bl. var. **cuspidifera** King. — Rehder in Jour. Arnold Arb. 10: 123 (1929).

*Ficus cuspidifera* Miquel in London Jour. Bot. 7: 434 (1848). — Handel-Mazzetti, Symb. Sin. 7: 92 (1929).

Handel-Mazzetti cites *F. rhomboidalis* Lévl. & Vant. as a synonym of *F. cuspidifera*.

**Ficus glaberrima** Blume, Bijdr. 451 (1825).

*Ficus suberosa* Léveillé & Vaniot in Fedde, Rep. Spec. Nov. 8: 549 (1910). — Léveillé, Fl. Kouy-Tchéou, 433 (1915). — Rehder in Jour. Arnold Arb. 10: 131 (1929). — **Synon. nov.**

*Ficus Blinii* Léveillé & Vaniot, l.c. 550 (1910). — Léveillé, l.c. 429 (1915). — **Synon. nov.**

*Ficus Feddei* Léveillé & Vaniot, op. cit. 9: 19 (1910). — **Synon. nov.**

*Ficus Kingiana* Léveillé, Fl. Kouy-Tchéou, 431 (1915), pro parte; non Hemsley. — **Synon. nov.**

CHINA. Kweichou: Lo-fou, J. Cavalerie, no. 3597, March 1909, (holotype of *F. suberosa*; fragments in A. A.); Pia-ouai-lo, alt. 600 m., J. Esquirol, no. 2197, Sept. 1910 (cited under *F. suberosa* in Fl. Kouy-Tchéou; duplicate in A. A.); Lo-fou, J. Cavalerie, no. 3595, March 1909 (holotype of *F. Blinii*; merotype in A. A.); Lo-fou, J. Cavalerie, no. 3634, Oct. 1908 (holotype of *F. Feddei*; photo. in A. A.); Huakiang, J. Cavalerie, no. 2172, June 3, 1904 (syntype of *F. Kingiana*; photo. in A. A.).

In his Flore du Kouy-Tchéou, Léveillé refers *F. Feddei* as a synonym to *F. suberosa*, but keeps *F. Blinii* distinct. Cavalerie's no. 2172 is cited as a syntype of *F. Kingiana* by Léveillé, but the characters under which *F. Kingiana* appears in the key, exclude it, and therefore the other syntype which belongs to *F. pyriformis* Hook. & Arn. must be considered the real type of the species.

**Ficus retusa** Linnaeus, Mant. 129 (1767). — Léveillé, Cat. Pl. Yun-Nan, 275 (1917). — Handel-Mazzetti, Symb. Sin. 7: 100 (1929).

*Ficus retusiformis* Léveillé in Fedde, Rep. Spec. Nov. 8: 549 (1910); Fl. Kouy-Tchéou, 433 (1915).

CHINA. Kweichou; Lou-fou, *J. Cavalerie*, no. 3601, March 1909 (holotype of *F. retusiformis*; merotype in A. A.).

*Ficus retusiformis* was first referred to *F. retusa* as a synonym by Handel-Mazzetti (l.c.).

**Ficus lacor** Hamilton. — Rehder in Jour. Arnold Arb. 10: 124 (1929).

*Ficus superba* Miq. sensu Handel-Mazzetti, Symb. Sin. 7: 92 (1929), quoad syn. *F. Tenii*; vix Miq.

CHINA. Yunnan: Kiao-kia, *Siméon Ten*, no. 733, Jan. 5, 1906, "grand arbre" (holotype of *F. Tenii* in hb. Lévl., isotype in hb. Ducloux in hb. Univ. Calif.; photos. in A. A.).

*Ficus Tenii* Lévl. was referred by Handel-Mazzetti (l.c.) to *F. superba*. *Ficus pseudoreligiosa* Lévl. has smaller longer-stalked receptacles and distinctly cuneate leaves.

**Ficus obscura** Blume, Bijdr. 474 (1825). — Gagnepain in Lecomte, Fl. Gén. Indo-Chine, 5: 792 (1928).

*Ficus asymmetrica* Léveillé & Vaniot in Mem. Acad. Ci. Art. Barcelona, ser. 3, 6: 147 (*Ficus Spec. Chin.* 9) (1907); in Fedde, Rep. Spec. Nov. 4: 82 (1907). — Léveillé, Fl. Kouy-Tchéou, 429 (1915). — Rehder in Jour. Arnold Arb. 10: 128 (1929). — **Synon. nov.**

CHINA. Kweichou: bord du Hoa-kiang, *L. Martin* in hb. *Bodinier*, no. 2577, Feb. 18, 1899 (holotype of *F. asymmetrica*; merotype in A. A.); Lo-fou, *J. Cavalerie*, no. 3596, March 1909 (cited in Fl. Kouy-Tchéou [as 3796]; duplicates in A. A.); bord du Ta-ras rivière, *J. Esquirol*, nos. 2692, July 20, 1911, and 3549 (cited in Fl. Kouy-Tchéou; duplicates in A. A.).

*Ficus asymmetrica* agrees well with *F. obscura* which has been reported from Kweichou by Gagnepain (l.c.) apparently based on Cavalerie 3596 named in the Paris Herbarium *F. obscura*. It is a species of wide distribution extending from the Malayan Archipelago to Tonkin, southern China and the eastern Himalayas.

**Ficus longipedata** Léveillé & Vaniot. — Rehder in Jour. Arnold Arb. 10: 127 (1929). — Handel-Mazzetti, Symb. Sin. 7: 93 (1929).

Handel-Mazzetti gives (l.c.) a complete description of the species, to which he refers *F. trichopoda* Léveillé and *F. sordida* Hand.-Mazz. as synonyms.

**Ficus laevis** Blume, Bijdr. 437 (1825).

*Ficus Jamini* Léveillé & Vaniot in Fedde, Rep. Spec. Nov. 8: 550 (1910). — Léveillé, Fl. Kouy-Tchéou, 430 (1915). — Rehder in Jour. Arnold Arb. 10: 129 (1929). — **Synon. nov.**

CHINA. Kweichou: Lo-fou, J. Cavalerie, no. 3601, March 1909 (holotype of *F. Jamini*; merotype in A. A.).

The specimen cited represents the typical glabrous form to which belongs also Henry's no. 11823 from Yunnan.

**Ficus scandens** Roxburg, Fl. Ind. 3: 536 (1832).

*Ficus cantoniensis* Bodinier ex Léveillé in Mem. Acad. Ci. Art. Barcelona, ser. 3, 6: 148 (Ficus Spec. China, 10) (1907); in Fedde, Rep. Spec. Nov. 4: 83 (1907). — **Synon. nov.**

CHINA. Hongkong: introduit à Hongkong, où il est maintenant très commun sur les murs, E. Bodinier, no. 1253, July 7, 1895 (holotype of *F. cantoniensis*; merotype in A. A.).

*Ficus scandens* is not recorded in Hemsley, Index Flora Sinensis, nor in Dunn & Tucher, Flora of Kwangtung and Hongkong, but it has been collected more recently in southern Yunnan and in Hainan.

**Ficus foveolata** Wall. — Rehder in Jour. Arnold Arb. 10: 124 (1929). — Handel-Mazzetti, Symb. Sin. 7: 95 (1929).

Handel-Mazzetti (l.c.) cites *F. rufipes* Lévl. as a synonym and points out that of the three syntypes cited only Cavalerie 340 belongs here, while Esquirol 75 and 76 represent Rubiaceae; the two last-named syntypes I have not yet seen.

**Ficus foveolata** var. **Thunbergii** (Maxim.) King. — Rehder in Jour. Arnold Arb. 10: 125 (1929).

*Ficus stipulata* Thunberg, Diss. Ficus, 5, 8 (1786). — Nakai, Fl. Sylv. Kor. 19: 124, t. 40 (1932).

*Ficus hederifolia* Léveillé. — Rehder, l.c. 129 (1929).

*Ficus Fauriei* var. *macrocarpa* Léveillé in Fedde, Rep. Spec. Nov. 11: 65 (1912).

KOREA. Quelpaert, add: scandens in rupibus, E. Taquet, no. 5972, Dec. 1911 "feuilles et fruits doubles du *F. Fauriei*" (holotype of *F. Fauriei* var. *macrocarpa*; photo. in A. A.); Hong-no, in declibus altis, repens in rupibus et tapetem formans, E. Taquet, no. 4425, July 2, 1910 (holotype of *F. hederifolia* Lévl.; merotype in A. A.).

Nakai enumerates under *F. stipulata* (l.c.) as synonyms *F. hederifolia* Lévl. and *F. Fauriei* var. *macrocarpa* Lévl.

**Ficus Martini** Léveillé & Vaniot. — Rehder, l.c. 127 (1929). — Handel-Mazzetti, Symb. Sin. 7: 95 (1929).

*Ficus botryoides* Léveillé & Vaniot in Mem. Acad. Ci. Art. Barcelona, ser. 3, 6: 148 (Ficus Sp. Chin. 10) (1907); in Fedde, Rep. Spec. Nov. 4: 83 (1907). — Léveillé, Fl. Kouy-Tchéou, 429 (1915). — Rehder in Jour. Arnold Arb. 10: 128 (1929).

*Ficus lacrymans* Léveillé, Fl. Kouy-Tchéou, 431 (1915). — Rehder in Jour. Arnold Arb. 10: 130 (1929).

*Ficus kwangtungensis* Merrill in Jour. Arnold Arb. 8: 3 (1927). — **Synon. nov.**

CHINA. Kweichou, add: Ta-rin, alt. 900 m., *J. Esquirol*, no. 5373, April 12, 1913, "figuier pleureur" (holotype of *F. lacrymans*; merotype in A. A.); environs de Tsin-gay, rochers au bord de la rivière, à Cha-teou-tchay, *E. Bodinier*, no. 2653, June 27, 1899 (holotype of *F. botryoides*; merotype in A. A.).

Handel-Mazzetti l.c. places *F. lacrymans* with *F. Martini*, and I now think that he is right; leaves of thinner texture with slight reticulation occur occasionally on specimens from various localities and the habit seems to be extremely variable; on many specimens the branchlets are very long and slender and probably hang down from scandent stems, while other specimens are described as upright shrubs, as is the type of *F. kwangtungensis*. Though I have not seen the type of the last-named species, I have seen specimens from Kwangtung and Hainan determined by its author.

**Ficus tikoua** Bureau in Jour. de Bot. 2: 213, pl. 7 (1888). — Léveillé, Cat. Pl. Yun-Nan, 275 (1917).

*Ficus Bonatii* Léveillé in Fedde, Rep. Spec. Nov. 6: 112 (1908). — **Synon. nov.**

*Ficus Bonatiana* Léveillé, Cat. Pl. Yun-Nan, 274 (1917).

CHINA. Yunnan: Yunnan-sen, ravins du mont Tchong-chan, *F. Ducloux*, no. 732, Aug. 18, 1905 (holotype of *F. Bonatii* in herb. Bonati in Univ. Calif.; photo. in A. A.; isotype in herb. New York Bot. Gard.).

The specimen cited above differs somewhat from most of the material in this herbarium in the uniformly short petioles not exceeding 1 cm.

**Ficus erecta** Thunberg. — Rehder in Jour. Arnold Arb. 10: 125 (1929). — Handel-Mazzetti, Symb. Sin. 7: 100 (1929). — Nakai, Fl. Sylv. Kor. 19: 121 (1932).

Nakai cites *F. Taquetii* as a synonym of *F. erecta*, and Handel-Mazzetti cites as synonyms besides *F. pseudopiriformis* and *F. Taquetii* also *F. Mairei* Lévl. which according to fragments from the type specimen belongs to *F. heteromorpha* Hemsl. (see Rehder, op. cit. 126).

**Ficus erecta** Thunb. var. **Sieboldi** (Miq.) King in Ann. Bot. Gard. Calcutta, **1**: 142 (1888). — Nakai, Fl. Sylv. Kor. **19**: 123, t. 39 (1932).

*Ficus pseudo-piriformis* Léveillé & Vaniot in Fedde, Rep. Spec. Nov. **5**: 282 (1908). — Nakai in Jour. Coll. Sci. Tokyo, **31**: 199 (Fl. Kor.) (1911).

*Ficus erecta* Thunb. — Rehder in Jour. Arnold Arb. **10**: 125 (1929), in part.

KOREA. Quelpaert : Hong-no, secus torrentes, *U. Faurie*, no. 1991, July 1907; in petrosis, *U. Faurie*, 2024, July 1907 (syntypes of *F. pseudo-piriformis*; fragments of no. 1991 in A. A.; no. 2024 ex Léveillé); secus torrentes, alt. 400 m., *E. Taquet*, no. 4422, July 28, 1910 (in hb. Léveillé sub *F. pseudo-piriformis*; merotype in A. A.).

According to Léveillé's description *Faurie* no. 2024 belongs here, but an isotype of this number in the A. A. herbarium is typical *F. erecta*. On the other hand, a duplicate of *Taquet* no. 900, which is cited by Léveillé under *F. Taqueti*, belongs to var. *Sieboldi*. *Ficus Taqueti*, according to Léveillé's description, represents typical *F. erecta*, while *F. pseudo-piriformis* agrees with var. *Sieboldi*. Nakai (l.c. 1932) cites *F. pseudo-piriformis* under *F. erecta* var. *Sieboldi*.

**Ficus hirta** Vahl. — Rehder, l.c. 126 (1929). — Handel-Mazzetti, Symb. Sin. **7**: 99, 100 (1929).

Handel-Mazzetti (l.c. 100) identifies *F. Porteri* Lévl. & Vant. with *F. hirta* Vahl.

**Ficus pandurata** Hance in Ann. Sci. Nat. ser. 4, **18**: 229 (1862).

*Ficus cuneata* Léveillé & Vaniot in Mem. Acad. Ci. Art. Barcelona, ser. 3, **6**: 149 (*Ficus* Sp. Chin. 11) (1907); in Fedde, Rep. Spec. Nov. **4**: 84 (1907). — Léveillé, Fl. Kouy-Tchéou, 429 (1915). — Rehder in Jour. Arnold Arb. **10**: 128 (1929). — Pro parte, quoad specim. Bodinier 2363. — Non Blume, nec Wallich, nec Miquel.

CHINA. Kweichou : environs de Kouy-yang, mont du College, gorge de Yan-pa, rocallles (May 16, 1898), environs de Tou-chan (May 31), *E. Bodinier*, no. 2363, "arbuste" (syntype of *F. cuneata*; photo. in A. A.).

On the label of Bodinier's no. 2363, two localities are given, but there is only one specimen on the sheet; the name *F. cuneata* does not appear on the label.

Here belongs probably also *F. comata* Hand.-Mazz. as suggested by F. P. Metcalf in a note on one of the sheets of that species.

**Ficus heteromorpha** Hemsley. — Rehder in Jour. Arnold Arb. **10**: 126 (1929). — Handel-Mazzetti, Symb. Sin. **7**: 98, 100 (1929).

*Ficus cuneata* Léveillé & Vaniot in Mem. Acad. Ci. Art. Barcelona, ser. 3, 6: 149 (Ficus Sp. Chin. 11) (1907); in Fedde, Rep. Spec. Nov. 4: 84 (1907). — Léveillé, Fl. Kouy-Tchéou, 429 (1915). — Rehder in Jour. Arnold Arb. 10: 128 (1929). — Pro parte, quoad specim. Cavalerie 1351. — Non Blume, nec Wallich, nec Miquel. — **Synon. nov.**

CHINA. Kweichou, add: Pin-fa, *J. Cavalerie*, no. 1351, Sept. 8, 1903, (syntype of *F. cuneata*; photo. in A. A.).

The other syntype of *F. cuneata* differing in the stalked receptacles seems referable to *F. pandurata* Hce.

Handel-Mazzetti (l.c. 100) refers *F. pinfaensis* to his *F. comata*, but the type of *F. pinfaensis*, Cavalerie 532, differs from *F. comata* in the sessile fruits, longer petioles and in the venation of the generally oblong and quite glabrous leaves rounded at base. To *F. heteromorpha* Handel-Mazzetti refers *F. Staphii* Lévl., but Léveillé's species, though apparently related to *F. heteromorpha*, differs in its leaves being rather densely hirsute on both sides and scarcely acuminate.

***Ficus formosana* Maximowicz.** — Rehder in Jour. Arnold Arb. 10: 127 (1929). — Handel-Mazzetti, Symb. Sin. 7: 98, 100 (1929).

*Ficus rhomboidalis* Léveillé, Fl. Kouy-Tchéou 433 (1915), p.p., quoad specim. Esquirol 3267. — Non Léveillé & Vaniot (1907).

CHINA. Kweichou: Teng-Tchéou, jardin du P. Marchand, Esquirol, no. 3267, June 22, 1902 (cited in Fl. Kouy-Tchéou; duplicate in A. A.).

The type of *F. rhomboidalis* belongs to *F. gibbosa* var. *cuspidifera* (Miq.) King.

*Ficus lageniformis* Lévl. & Vant. was referred by Handel-Mazzetti (l.c. 100) to *F. formosana*, as already identified by the writer (l.c.)

***Ficus laceratifolia* Léveillé & Vaniot.** — Rehder in Jour. Arnold Arb. 10: 130 (1929).

This species has been referred tentatively by Handel-Mazzetti (Symb. Sin. 7: 100) to his *F. comata* as a form with lacerated leaves, but looks quite distinct. It is represented in this herbarium by a photograph of the type with fragments and by two specimens collected by W. P. Fang in Szechuan, no. 2415, from Mt. Omei and no. 5645 from Nanchuan Hsien.

***Ficus Cavaleriei* Léveillé & Vaniot.** — Rehder in Jour. Arnold Arb. 10: 128 (1929).

This species seems related to *F. pyriformis* Hook. & Arn., but it is quite glabrous and the veins of the leaves diverge at nearly right angles;

it also resembles *F. stenophylla* Hemsley, but the leaves are broader and gradually narrowed from the middle to the ends.

***Ficus pyriformis*** Hooker & Arnott, Bot. Beechey Voy. 216 (1841). — Léveillé, Cat. Pl. Yun-Nan, 275 (1917), “*piriformis*.” — Handel-Mazzetti, Symb. Sin. 7: 98, 100 (1929).

*Ficus Nerium* Léveillé & Vaniot in Fedde, Rep. Spec. Nov. 4: 66 (1907). — Léveillé, Fl. Kouy-Tchéou, 432 (1915). — Rehder in Jour. Arnold Arb. 10: 130 (1929).

*Ficus Kingiana* Léveillé, Fl. Kouy-Tchéou, 431 (1915), pro parte; non Hemsley. — **Synon. nov.**

CHINA. Kweichou: without locality, *J. Esquirol* (holotype of *F. Nerium*; fragments in A. A.); Tchen-fong, *J. Esquirol*, no. 914 (cited in Fl. Kouy-Tchéou; duplicate in A. A.); Ly-po, *J. Cavalerie*, Feb. 15, 1900 (syntype of *F. Kingiana*; merotype in A. A.).

*Ficus Nerium* was first referred to *F. pyriformis* by Handel-Mazzetti (l.c. 100). *Ficus Kingiana* appears in Fl. Kouy-Tchéou without description, but as its characters can be partly ascertained from the key, it is not a nomen nudum; of the two syntypes, only the specimen from Ly-po belongs here and must be considered the type (lectotype) since it fits the characters given in the key, while the other specimen does not.

***Ficus pyriformis*** Hook. & Arn. var. ***ischnopoda*** King in Ann. Bot. Gard. Calcutta, 1: 158, pl. 201c (1888).

*Ficus macropodocarpa* Léveillé & Vaniot in Fedde, Rep. Spec. Nov. 4: 66 (1907). — Léveillé, Fl. Kouy-Tchéou, 431 (1915). — Rehder in Jour. Arnold Arb. 10: 130 (1929). — **Synon. nov.**

CHINA. Kweichou: without locality, *J. Esquirol*, no. 838 (holotype of *F. macropodocarpa*; merotype in A. A.); rivière de Loufou, *J. Esquirol*, no. 2216, Sept. 1910 (cited in Fl. Kouy-Tchéou; duplicate in A. A.).

*Ficus macropodocarpa* was first referred by Handel-Mazzetti to *F. pyriformis* (l.c. 100); on account of the long-peduncled receptacles, it seems referable to var. *ischnopoda*.

***Ficus Esquirolii*** Léveillé & Vaniot in Mem. Acad. Ci. Art. Barcelona, ser. 3, 6: 150 (Ficus Spec. Chin. 12) (1907); in Fedde, Rep. Spec. Nov. 4: 84 (1907). — Léveillé, Fl. Kouy-Tchéou, 430 (1915).

*Ficus stenophylla* Hemsley in Hooker's Icon. 26: t. 2536 (1897), p.p., excl. parte typ. — Handel-Mazzetti, Symb. Sin. 7: 98 (1929).

CHINA. Kweichou: préfecture de Hin-y-fou, *J. Esquirol* in hb. Bodinier, no. 2588, April 1899 (holotype of *F. Esquirolii*; photo. in A. A.).

This species seems to be closely related to *F. pyriformis* Hook. & Arn. and to *F. stenophylla* Hemsl.; from the former it differs in the narrower long-caudate leaves, subsessile subglobose receptacle covered with short appressed hairs, and from the latter by the thinner caudate leaves slightly hairy below and the subsessile subglobose and hairy receptacle.

Hemsley based his species mainly on Henry's no. 8716 from Hainan which has to be considered the type of his species and is the plant figured on the plate except figure 7 representing a single receptacle which is from Faber's no. 446 and apparently belongs to *F. Esquirolii*. The description also applies mainly to the Hainan plant if under "Reptacula" the words "subsessilia vel . . . vel sphaeroidea . . . vel leviter puberula" are taken out.

Typical *F. stenophylla* is represented in this herbarium by plants from Hainan (W. T. Tsang no. 378, McClure, no. 9584), Kwangtung (C. L. Tso, no. 21048, Levine & Kwok, no. 875), Fukien (L. Y. Tai, no. 11673), Chekiang (R. C. Ching, no. 1692) and from Kweichou (Steward, Chiao & Cheo, no. 877); the last named specimen seems to approach *F. Esquirolii* in the shorter stalk of the receptacle. *Ficus Esquirolii* is represented besides by the photograph of the type also by Handel-Mazzetti, no. 10695, Y. Tsiang, no. 6053 and Steward, Chiao & Cheo, no. 147, all from Kweichou.

Under *Ficus Esquiroliana* Léveillé (in Bull. Geog. Bot. 24: 252) says of *F. Esquirolii* "extra genus probata est" but he still enumerates it the following year in his Flore du Kouy-Tchéou as *F. Esquirolii*, while he changes *F. Esquiroliana* to *F. laus-Esquirolii*.

***Ficus silhetensis*** Miquel in Ann. Mus. Bot. Lugd.-Bat. 3: 223, 291 (1867). — Léveillé, Cat. Pl. Yun-Nan, 275 (1917).

*Ficus Cyanus* Léveillé & Vaniot. — Rehder in Jour. Arnold Arb. 10: 129 (1929) — **Synon. nov.**

*Ficus Cyanus* var. *viridescens* Léveillé & Vaniot in Mem. Acad. Ci. Art. Barcelona, ser. 3, 6: 149 (Ficus Spec. Chin. 11) (1907); in Fedde, Rep. Spec. Nov. 4: 84 (1907).

*Ficus congesta* Léveillé & Vaniot in Léveillé, Fl. Kouy-Tchéou, 429 (1915). — Rehder in Jour. Arnold Arb. 10: 128 (1929). — **Synon. nov.**

CHINA. Kweichou: Si-liéou-gay, trous profonds, *J. Cavalerie*, no. 169, July 3, 1902 (holotype of *F. Cyanus*; merotype in A. A.); arrivée à Tong-kai (ruisseau), *J. Esquirol*, no. 3031, July 25, 1911 (cited in Fl. Kouy-Tchéou under *F. Cyanus*; photo. and duplicate in A. A.); Pin-fa, *J. Cavalerie*, no. 1099, June 23, 1903 (holotype of *F. Cyanus* var. *viridescens*; photo. in A. A.); Tché-chou, bois, *J. Esquirol*, no. 2506, Sept. 1909 (holotype of *F. congesta*; merotype in A. A.).

*Ficus Cyanus* differs slightly from *F. silhetensis* as figured and de-

scribed by King (in Ann. Bot. Gard. Calcutta, 1: 154, pl. 194, 1888) in the shorter petioles and cuneate base of the leaf, but otherwise agrees. The variety *viridescens* does not seem to differ from typical *F. Cyanus*, and in Flore du Kouy-Tchéou, Léveillé enumerates it under the species. *Ficus congesta* resembles closely Cavalerie's no. 1099 (*F. Cyanus* var. *viridescens*) except that the leaves are somewhat smaller.

The species has also been collected in Kweichou by Y. Tsiang, no. 4404, determined as *F. silhetensis* Miq. by E. D. Merrill.

**Ficus Stapfii** Léveillé.—Rehder in Jour. Arnold Arb. 10: 131 (1929).

*Ficus Stapfii* is represented only by a sterile specimen (photo. and fragments in A. A.). It was referred by Handel-Mazzetti (Symb. Sin. 7: 100) tentatively to *F. heteromorpha* Hemsl., but differs in its rather dense pubescence; in this respect it resembles *F. silhetensis* Miq., but the leaves are oblong and obtusish to acutish, not acuminate at the apex.

**Ficus Abelii** Miquel in Ann. Mus. Bot. Lugd.-Bat. 3: 281 (1867).

*Ficus Schinzii* Léveillé & Vaniot in Fedde, Rep. Spec. Nov. 8: 550 (1910).—Léveillé, Fl. Kouy-Tchéou, 433 (1915).—Rehder in Jour. Arnold Arb. 10: 131 (1929).—Non *F. Schinziana* Warb. —  
**Synon. nov.**

CHINA. Kweichou: Lo-fu, *J. Cavalerie*, no. 3592, Apr. 1909 (holotype of *F. Schinzii*; merotype in A. A.); Tsao-ly, bord de rivière, alt. 600 m., *J. Esquirol*, no. 3503, Feb. 5, 1912 (cited in Fl. Kouy-Tchéou; duplicate in A. A.).

By Handel-Mazzetti (l.c. 100) *F. Schinzii* was referred to *F. pyriformis* and its allies. It certainly belongs to *F. Abelii* which has not yet been recorded from Kweichou, though it has been collected in Szechuan and Hunan.

**Ficus Roxburghii** Wallich. Num. List. 4508 (1832).—Handel-Mazzetti, Symb. Sin. 7: 100 (1929).

*Ficus macrocarpa* Léveillé & Vaniot in Mem. Acad. Ci. Art. Barcelona, ser. 3, 6: 152 (Ficus Spec. Chin. 14) (1907); in Fedde, Rep. Spec. Nov. 4: 85 (1907).—Léveillé, Fl. Kouy-Tchéou, 431 (1915), sub *F. macrocarpa* Wight.—Rehder in Jour. Arnold Arb. 10: 130 (1929).—Non Wight.

CHINA. Kweichou: without precise locality, *J. Cavalerie* in 1899 (holotype of *F. macrocarpa*; ex Léveillé); ouest de Lo-fou, *J. Cavalerie*, no. 3593, March 1909, "bel arbre" (cited in Fl. Kouy-Tchéou; photo. in A. A.).

Handel-Mazzetti refers to *F. Roxburghii* besides *F. macrocarpa* also *F. Letaqui* Lévl. & Vant. which see below.

*Ficus Roxburghii* Wall. must be considered a valid publication of a new name, since he cites as a synonym "*F. macrophylla* Hb. Roxb. (haud Desf.)" a species described in Roxburgh, Fl. Ind. 3: 556 (1832).

**Ficus Letaqui** Léveillé & Vaniot in Fedde, Rep. Spec. Nov. 8: 550 (1910). — Léveillé, Fl. Kouy-Tchéou, 531 (1915). — Rehder in Jour. Arnold Arb. 10: 130 (1929).

This species was referred by Handel-Mazzetti (Symb. Sin. 7: 100) to *F. Roxburghii*, but it differs markedly from *F. Roxburghii* in the much smaller subglobose and subsessile receptacles, borne mostly in pairs on the nodes of long and slender leafless shoots; the leaves are similar in shape, but scabrid above and borne on longer and slenderer petioles.

**Ficus Vanioti** Léveillé, Fl. Kouy-Tchéou, 434 (1915), pro parte.

CHINA. K w e i c h o u : bois sacré au Che-chen de Na-é, *J. Esquirol*, nos. 3077 and 3078, end of June and July 1 (syntype of *F. Vanioti*; photo. in A. A.).

The name *F. Vanioti* was published in Flore du Kouy-Tchéou with *F. ouangliensis* as a synonym and was intended apparently as a new name for that species which is based on Cavalerie no. 2568, and is not a *Ficus*, but an *Aglaia*. The two specimens cited above, however, represent a species of *Ficus*, but the material is so fragmentary, consisting only of bare branches, broken leaves and a few broken receptacles, that exact identification is not possible; the material seems to belong in the affinity of *F. formosana* Maxim.

#### LORANTHACEAE

**Tolypanthus Maclarei** (Merr.) Danser in Bull. Jard. Bot. Buitenzorg, ser. 3, 10: 355 (1929).

*Loranthus Maclarei* Merrill in Philipp. Jour. Sci. 21: 494 (1922).

*Loranthus Esquirolii* Léveillé, Rev. Ann. Chine, 1916: 21 (MS). — Nomen non rite publicatum.

CHINA. K w e i c h o u : Pin-fa, Heou-tcheng, *J. Esquirol*, no. 52, "liane parasite sur le bibassier" (type of *Loranthus Esquirolii*; photo. in A. A.).

Léveillé's name *Loranthus Esquirolii* appeared in a manuscript publication, of which only a few copies were distributed and cannot be considered validly published; Merrill's specific epithet therefore, remains valid. The name *Loranthus Esquirolii* does not appear on the original label of the type specimen which was identified by Danser as *Tolypanthus Maclarei*.

(*To be continued*)

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